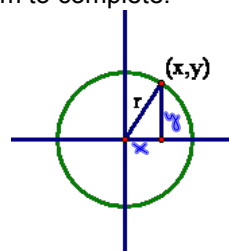


11.7 Notes

Equations of Circles

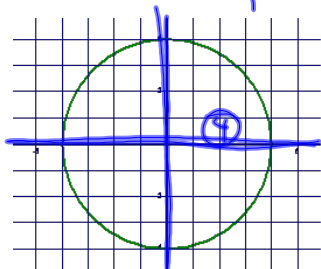
Use Pythagorean Theorem to complete:

$$r^2 = \underline{x^2} + \underline{y^2}$$

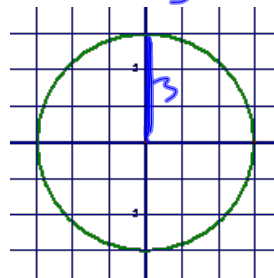
This is the equation for a circle centered at the **origin**.

Write the equation for the following circles:

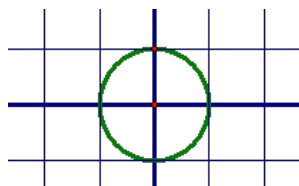
1. $16 = x^2 + y^2$



2. $9 = x^2 + y^2$

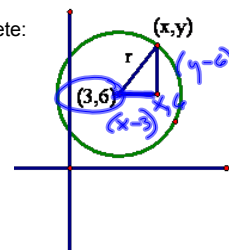


3. $1 = x^2 + y^2$



Use Pythagorean Theorem to complete:

$$r^2 = \underline{(x-3)^2} + \underline{(y-6)^2}$$



$$r^2 = (x - h)^2 + (y - k)^2$$

This is the equation of a circle in standard form

r - radius
 $C(h, k)$

Given the equation, what is the center and radius?

$$25 = (x - 3)^2 + (y - 8)^2$$

1. $C(3, 8)$ $r = 5$

$$16 = (x + 5)^2 + (y - 2)^2$$

2. $C(-5, 2)$ $r = 4$

$$36 = x^2 + y^2$$

3. $C(0, 0)$ $r = 6$

$$81 = (x - 12)^2 + (y + 10)^2$$

4. $C(12, -10)$ $r = 9$

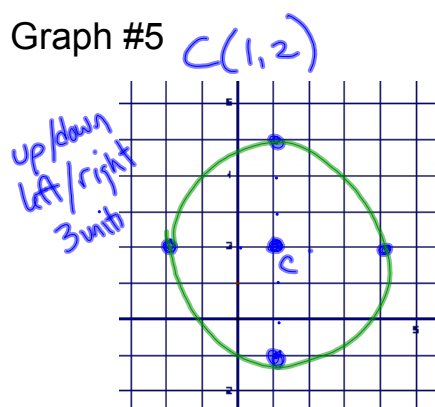
Given the center and radius, write the equation.

5. $C(1, 2)$ $r = 3$ $9 = (x - 1)^2 + (y - 2)^2$

6. $C(-3, 6)$ $r = 7$ $49 = (x + 3)^2 + (y - 6)^2$

7. $C(8, 0)$ $r = 10$ $100 = (x - 8)^2 + y^2$

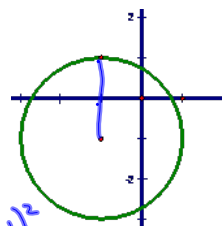
Graph #5



8. Use the picture to the right. What is the equation?

$C(-1, -1) \quad r = 2$

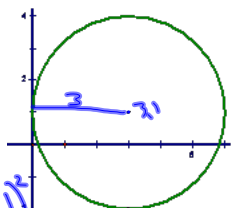
$4 = (x+1)^2 + (y+1)^2$



9. Use the picture to the right. What is the equation?

$C(3, 1) \quad r = 3$

$9 = (x-3)^2 + (y-1)^2$



HW

p.629-632

2-12, 16-18, 22-25